



1
00:00:00,000 --> 00:00:00,790
[MUSIC PLAYING]

2
00:00:00,790 --> 00:00:03,510
NASA's X-57 Maxwell is
an all-electric aircraft

3
00:00:03,510 --> 00:00:06,210
designed to help develop
the primary certification

4
00:00:06,210 --> 00:00:09,390
standards for the emerging
electric aircraft industry.

5
00:00:09,390 --> 00:00:11,550
And it will be the
first piloted X-plane

6
00:00:11,550 --> 00:00:14,680
that we've had at NASA
in over two decades.

7
00:00:14,680 --> 00:00:16,890
So this is the Mod
2 configuration.

8
00:00:16,890 --> 00:00:18,570
It involves testing
of the aircraft's

9
00:00:18,570 --> 00:00:21,130
cruise electric
propulsion system.

10
00:00:21,130 --> 00:00:23,157
So after we received
the aircraft initially,

11

00:00:23,157 --> 00:00:24,990

we did a couple of
modifications, cleaned up

12

00:00:24,990 --> 00:00:25,740

some wiring.

13

00:00:25,740 --> 00:00:28,350

We did some low voltage checks.

14

00:00:28,350 --> 00:00:31,230

So HVT is what we call
high voltage testing.

15

00:00:31,230 --> 00:00:33,030

It's the first time
where we're applying

16

00:00:33,030 --> 00:00:34,800

high voltage to
the aircraft here

17

00:00:34,800 --> 00:00:36,690

at the center at Armstrong.

18

00:00:36,690 --> 00:00:38,290

We use our battery
support system,

19

00:00:38,290 --> 00:00:41,340

which simulates the batteries.

20

00:00:41,340 --> 00:00:43,470

With high voltage testing,
we're able to verify all

21

00:00:43,470 --> 00:00:45,030

the high voltage going to it.

22

00:00:45,030 --> 00:00:47,520

Set up our general
motors run operations.

23

00:00:47,520 --> 00:00:50,040

It was the first time that
we actually spun the motors.

24

00:00:50,040 --> 00:00:51,780

So we were able to
spin it, check it

25

00:00:51,780 --> 00:00:54,160

out all the way through
its complete voltage range

26

00:00:54,160 --> 00:00:56,340

and at the higher power
settings and verify

27

00:00:56,340 --> 00:00:58,260

that it's, in general,
working properly

28

00:00:58,260 --> 00:01:01,590

and ready for the next
phase of integration.

29

00:01:01,590 --> 00:01:04,110

It was extremely
important to power

30

00:01:04,110 --> 00:01:07,230

it externally because it allowed
us to work out our safety

31

00:01:07,230 --> 00:01:08,730

mitigations that
we have in place,

32

00:01:08,730 --> 00:01:11,460
get familiar with the operations
of application of high voltage

33

00:01:11,460 --> 00:01:14,160
to the aircraft, and really
vet out that internal system

34

00:01:14,160 --> 00:01:16,690
to make sure that it's ready.

35

00:01:16,690 --> 00:01:19,290
We're in a state where we can
vet out some of the flight

36

00:01:19,290 --> 00:01:22,530
software and allow the software
team to work in the background

37

00:01:22,530 --> 00:01:25,140
to get that prepared without
having it in a full flight

38

00:01:25,140 --> 00:01:25,770
configuration.

39

00:01:25,770 --> 00:01:27,960
So mitigation to
make sure that we're

40

00:01:27,960 --> 00:01:31,280
ready for that next step and
everything's properly wired.

41

00:01:31,280 --> 00:01:33,030
The next step, we're
going to integrate it

42

00:01:33,030 --> 00:01:35,940
with our battery control modules

which the system that supplies

43

00:01:35,940 --> 00:01:38,310
battery management for our
batteries and the low voltage

44

00:01:38,310 --> 00:01:40,290
power and controls it
there, software-wise.

45

00:01:40,290 --> 00:01:41,790
And then we're going
to integrate it

46

00:01:41,790 --> 00:01:42,930
with our battery models.

47

00:01:42,930 --> 00:01:43,920
There's 16.

48

00:01:43,920 --> 00:01:45,210
There's two packs of 8.

49

00:01:45,210 --> 00:01:46,800
And that is where,
ultimately we'll

50

00:01:46,800 --> 00:01:49,200
be able to take it to our
next phase of testing where

51

00:01:49,200 --> 00:01:50,640
batteries power the aircraft.

52

00:01:50,640 --> 00:01:51,570
We run the motors.

53

00:01:51,570 --> 00:01:54,450
And we do our formal

verifications on the system

54

00:01:54,450 --> 00:01:56,250

before moving on
to the high speed